



DMC  
FAA-G-2300  
September 28, 1967

## DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION SPECIFICATION

### PANEL AND VERTICAL CHASSIS, RACK

#### 1. SCOPE

1.1 Scope.- This specification sets forth requirements applicable to standard 19-inch slotted rack panels and vertical chassis designs based thereon.

1.2 Classification.- The following types of equipment are specified herein:

- |          |  |
|----------|--|
| Type I   | Rack Panel-Door and Vertical Chassis                                   |
| Type II  | Rack Panel and Vertical Chassis (Panel Access Plate)                   |
| Type III | Rack Panel, Size C Maximum, and Vertical Chassis<br>(Top Access Plate) |
| Type IV  | Rack Panel, Size B Maximum, and Open Vertical Chassis                  |
| Type V   | Blank Rack Panels  |

#### 2. APPLICABLE DOCUMENTS

2.1 None.

#### 3. REQUIREMENTS

3.1 Equipment to be furnished by contractor.- See the governing detailed electronic equipment or general specifications (referred to herein as "collateral" specifications) which call out this specification as an applicable document.

3.2 Type I rack panel-door and vertical chassis.- Where rack panel-door and vertical chassis construction is specified as Type I in accordance with this specification, construction shall consist of the "standard door panel with enclosed vertical chassis" in accordance with drawing D-21342H. Paragraphs 3.7 through 3.10 shall apply.

3.3 Type II; rack panel and vertical chassis (panel access plate).- Where rack panel and vertical chassis construction is specified as Type II in accordance with this specification, construction shall consist of a vertical chassis, Method-2, as shown on drawing D-21342H, except that in lieu of hinges and latch, the door shall be secured with not less than six captive machine screws (brass or bronze, plated; or stainless steel), spaced 6-1/2 inches  $\pm$  1/2 inch center-to-center, engaging threaded inserts in the upper and lower chassis flanges, or quick-lock cowl fasteners of the types manufactured by Camloc Fastener Co., United-Carr Fastener Corp., Shakeproof Lockwasher Co., or equal. Ferrous materials may be used for these fasteners if non-corrosive or if heavily electroplated to prevent corrosion. (NOTES 6, 7, 9, and 12 of D-21342H shall not apply). Paragraphs 3.7 through 3.10 shall apply. No electrical parts, cables, or wiring shall mount on or be secured to the panel access plate.

3.4 Type III; rack panel, size C maximum, and vertical chassis (top access plate).- Where rack panel and vertical chassis construction is specified as Type III in accordance with this specification, construction shall consist of a vertical chassis on the back of a rack panel (no panel-door). The chassis shall be not less than 5 inches deep and shall have a full-size removable cover plate on top, to allow access to parts and wiring. The cover plate shall be secured with six machine screws (brass, plated; or stainless steel) engaging threaded inserts in the chassis. The screws shall be located along front and rear edges spaced 7-1/2 inches  $\pm$  1/2 inch. In other respects the chassis shall be in accordance with the following portions of drawing D-21342H:

REAR VIEW and END VIEW, GENERAL DETAILS  
NOTES 2, 3, 4, 5, 8, 10, and 11

Paragraphs 3.7 through 3.10 shall apply. The Type III construction is intended for use where panel size does not exceed C (3.7.1).

3.5 Type IV; rack panel and open vertical chassis.- Where rack panel and vertical chassis construction is specified as Type IV in accordance with this specification, construction shall consist of a rack panel (no door) with vertical chassis. The chassis shall be not less than five inches deep. The top and bottom of the chassis shall be open except for an inside flange. 1/2 inch to 5/8 inch wide. In other respects, the chassis shall be in accordance with the following portions of drawing D-21342H:

REAR VIEW and END VIEW, GENERAL DETAILS  
NOTES 2, 3, 4, 8, and 11

Paragraphs 3.7 through 3.10 shall apply. The Type IV construction is intended for use where panel size does not exceed B (3.7.1).

3.6 Type V; blank rack panels.- Blank rack panels specified as Type V in accordance with this specification shall meet the requirements of 3.7 hereof and shall have no additional holes, cutouts, or other machining and shall have no attached parts or structure (also see 3.10).

3.7 Rack panels.- Rack panels shall meet the requirements of drawing D-2114OD. The panel sizes, or size limitations, shall be as specified in the collateral specifications (also see 3.4 and 3.5 hereof).

3.7.1 Size designations.- Panel sizes by letter designation (A, B, C, etc.) shall be as shown on D-2114OD.

3.8 Restricted panel area.- In order to accommodate conventional screw mounting of rack panels (via slotted panel-mounting holes) in standard cabinet-type racks, there shall be no projections on the surfaces, or over the surfaces, of the areas  $7/8$  inch in from each end on both front and rear of any rack panel.

3.9 Vertical chassis parts mounting.- When a vertical chassis is used, the large parts, such as transformers, reactors, large capacitors, electron tubes, together with terminal blocks and power receptacles, shall be mounted on the rear vertical surface of the chassis (tube and relay sockets arranged so that tubes and plug-in relays can be inserted and removed from the rear of the chassis). Small parts shall be mounted inside the chassis, arranged for accessibility. All parts shall be so mounted as to confine most or all of the wiring to the inside of the chassis.

3.9.1 AC line receptacle and attachment cord.- On panel-chassis equipments requiring connection to the 120 V (design-center value) AC supply line, a grounding-type three-pole male recessed receptacle shall be provided and mounted on the lower right rear of the chassis (as viewed from the rear). The receptacle shall be Harvey Hubbell, Inc. #7486G, midget flush base, 3-wire polarized, grounded, twist-lock type, 15 A 125 V; or equal. An attachment cord, length in the range 2 to 3 feet, shall be furnished. The cord shall be SJ, three-wire, stranded, rubber-covered and rubber jacketed, minimum wire size 1600 circular mils. One end shall have a connector to fit the recessed receptacle, Hubbell #7481 midget 3-wire twist-lock connector, 15 A 125 V; or equal. The other end shall have a rubber finger-grip cap, standard 3-wire grounding type (parallel blades, U-shaped grounding pin); Hubbell #5274; or equal. Wiring and polarity shall be in accordance with fig. 1 hereof.

3.9.2 Facilities for interunit cabling.- Each vertical chassis assembly shall have facilities on the rear of the chassis arranged so that incoming cable branches (except AC supply line cable - see 3.9.1) can be routed to the chassis terminating device from an interunit cable running vertically up past the left-hand side of the chassis (viewed from the rear), without obstructing back-of-chassis parts to which access must be had in routine maintenance.

3.10 Finishes.- See collateral specifications.

4. QUALITY ASSURANCE PROVISIONS

4.1 See collateral specifications.

5. PREPARATION FOR DELIVERY

5.1 See collateral specifications or contract schedule.

6. NOTES

6.1 None.

\* \* \* \* \*

FOR FIGURE 1, SEE PAGE 5.

ATTACH FOLLOWING PAGE 5: Drawings D-21140 D  
D-21342 H  
C-21278 F  
C-21286 E

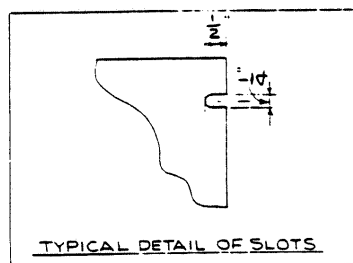
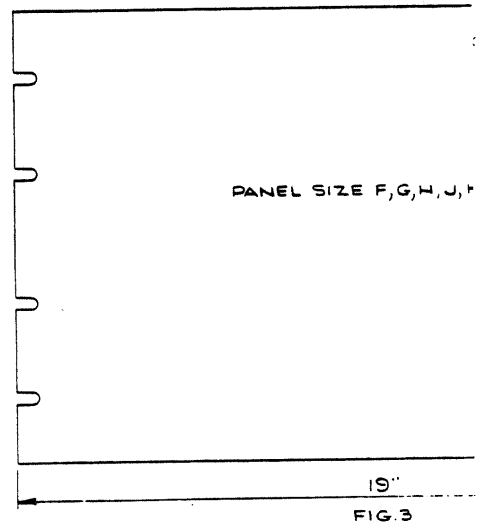
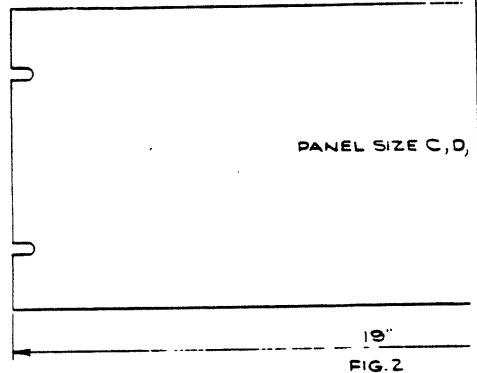
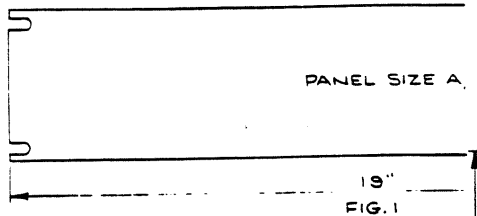


TABLE OF PANEL SIZES				
PANEL SIZE	FIG.	DIMENSION X	DIMENSION Y	DIMENSION Z
A	1	1 $\frac{23}{32}$ "		1 $\frac{1}{4}$ "
B	1	3 $\frac{15}{32}$ "		3"
C	2	5 $\frac{7}{32}$ "		2 $\frac{1}{4}$ "
D	2	6 $\frac{31}{32}$ "		4"
E	2	8 $\frac{23}{32}$ "		5 $\frac{3}{4}$ "
F	3	10 $\frac{15}{32}$ "	3"	2 $\frac{1}{4}$ "
G	3	12 $\frac{7}{32}$ "	2 $\frac{1}{4}$ "	3 $\frac{1}{2}$ "
H	3	13 $\frac{31}{32}$ "	3"	4"
J	3	15 $\frac{23}{32}$ "	4 $\frac{3}{4}$ "	4"
K	3	17 $\frac{15}{32}$ "	6 $\frac{1}{2}$ "	4"
L	3	19 $\frac{7}{32}$ "	5 $\frac{3}{4}$ "	5 $\frac{1}{4}$ "
M	3	20 $\frac{31}{32}$ "	6 $\frac{1}{2}$ "	5 $\frac{3}{4}$ "
N	4	22 $\frac{23}{32}$ "	SEE DETAILS FIG. 4	
O	5	24 $\frac{15}{32}$ "	SEE DETAILS FIG. 5	
P	6	26 $\frac{7}{32}$ "	SEE DETAILS FIG. 6	

### NOTES

- MATERIAL TO BE SELECTED FROM ALUMINUM ALLOYS LISTED BELOW.  
1100-H14, 16, 18 (25- $\frac{1}{2}$ H,  $\frac{3}{4}$ H, H)  
3003-H14, 16, 18 (35- $\frac{1}{2}$ H,  $\frac{3}{4}$ H, H)  
3004-H32, 34, 36, 38 (45- $\frac{1}{4}$ H,  $\frac{1}{2}$ H,  $\frac{3}{4}$ H, H)  
2024-T3 (245-T)  
5052-H32, 34, 36, 38 (525- $\frac{1}{4}$ H,  $\frac{1}{2}$ H,  $\frac{3}{4}$ H, H)  
6061-T4, 6  
7075-T6
- ALL PANELS TO BE 19"  $\pm$   $\frac{1}{8}$ " WIDE. THICKNESS OF ALL PANELS TO BE  $\frac{3}{4}$ ". ALL EDGES TO BE SQUARE CUT, OR GROUND TO DIMENSIONS FREE FROM BURRS & DEFORMATION.
- ALL DIMENSIONS SHALL BE ACCURATE WITHIN  $\pm$   $\frac{1}{64}$ ", EXCEPT THAT NO ACCUMULATIVE TOLERANCE IS ALLOWED IN SLOT-SPACING DIMENSIONS. EACH SLOT SHALL BE SPACED FROM ALL OTHER SLOTS ON THE SAME SIDE OF THE PANEL WITHIN  $\pm$   $\frac{1}{64}$ " OF THE SUM OF THE NOMINAL DIMENSIONS GIVEN ON THE DRAWING. PANELS SHALL BE SQUARE WITH THE BOTTOM EDGE WITHIN THE LIMITS SHOWN IN FIG. 7.

REV. LTR	DATE	DESCRIPTION	CHECKED	APPROVED
D	9/20/64	REVISED TITLE BLOCK		
<p align="center"><b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WASHINGTON, D. C. 20590</p>				
<p align="center"><b>PANELS, RACK</b></p>				
DESIGNED BY	APPROVED BY			
ACTE	F. B. SMITH			
CHIEF, ELECTRONIC STANDARDS SECTION		CHIEF, SYSTEMS STANDARDS BRANCH, RD-420		
DESIGNED BY	DATE	REV. LTR		
SYSTEMS RESEARCH AND DEVELOPMENT SERVICE	DATE - FEB 4, 1966			
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FAA-G-2300  
AMENDMENT-1  
December 1, 1969

## DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION SPECIFICATION

### PANEL AND VERTICAL CHASSIS, RACK

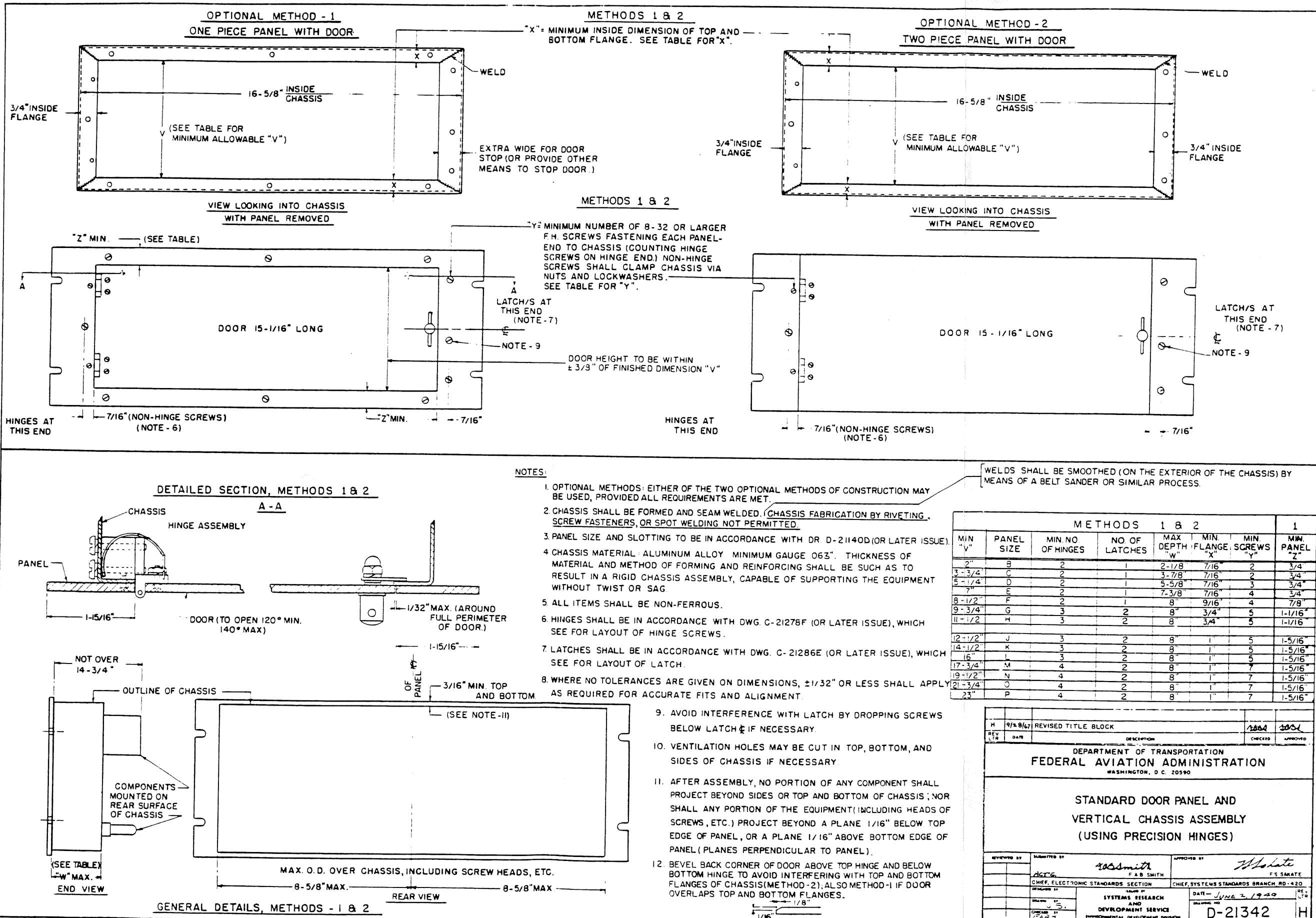
This AMENDMENT-1 forms a part of FAA-G-2300 dated September 28, 1967.

Page 3, paragraph 3.9.1: Delete all after the first sentence and substitute: "The receptacle shall be Industry No. 7486G, midget flush base, 3-wire polarized, grounded, twist-lock type, 15 A 125 V. An attachment cord, length in the range 2 to 3 feet, shall be furnished. The cord shall be SJ, three-wire, stranded, rubber covered and rubber jacketed, minimum wire size AWG 18. One end shall have a connector to fit the recessed receptacle, Industry No. 7484 midget 3-wire twist-lock connector, cord grip, 15 A 125 V. The other end shall have a rubber finger-grip cap, standard 3-wire grounding type (parallel blades, U-shaped grounding pin), Industry No. 5274. Wiring and polarity shall be in accordance with Fig. 1 hereof."

Drawing D-21342H, attached to FAA-G-2300: Under "NOTES:" delete the note "2. CHASSIS SHALL BE FORMED . . . . . PERMITTED." and substitute the following therefor:

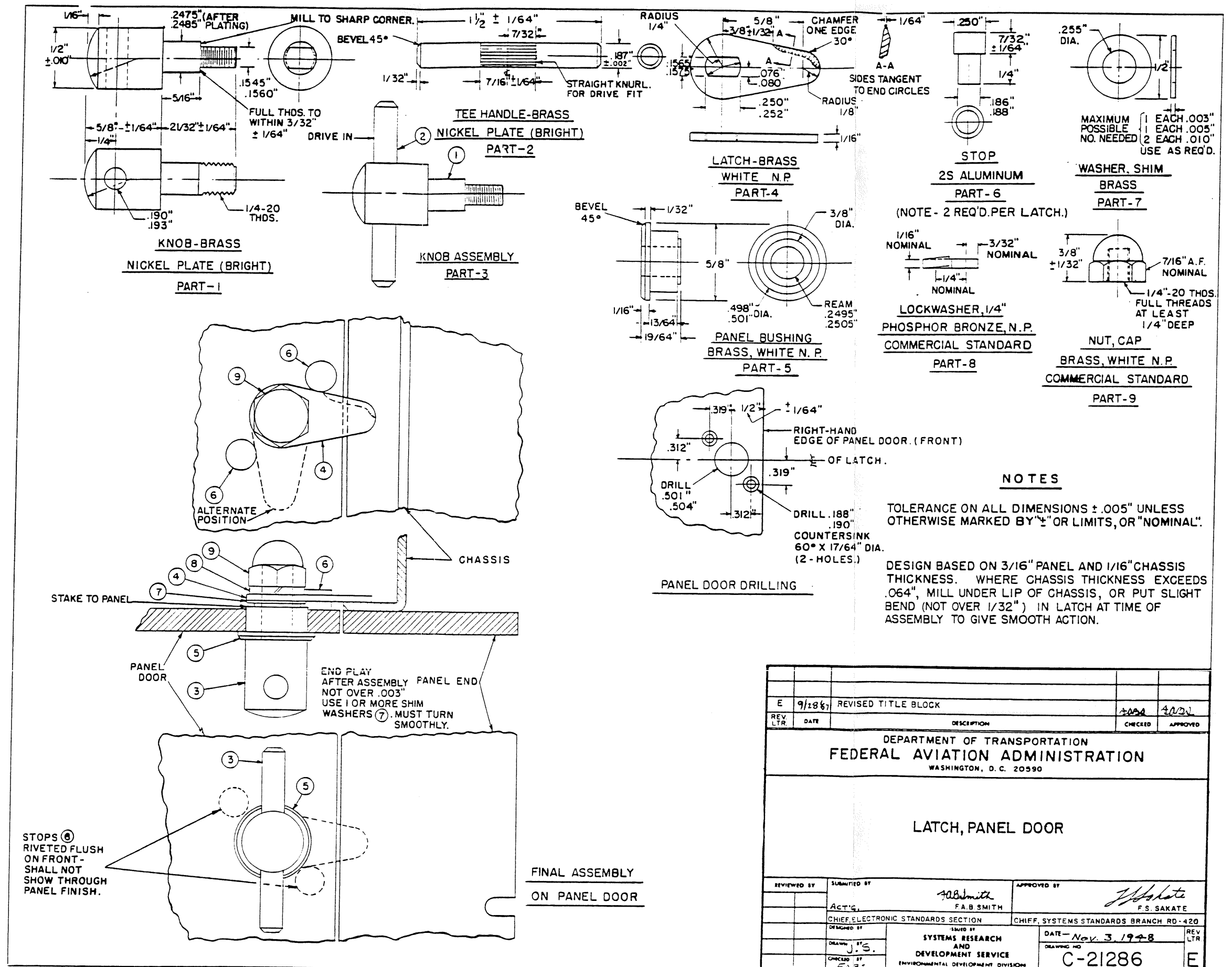
"2. CHASSIS SHALL BE FORMED AND CONTINUOUSLY BUTT OR FILLET WELDED. ALL CONNECTING EDGES SHALL BE CLEANED OF FOREIGN MATERIAL AND SHALL BE DIMENSIONED FOR PROPER FIT-UP. ALL WELDS SHALL BE FULL PENETRATION TYPE AND SHALL BE SMOOTHED (ON THE EXTERIOR OF THE CHASSIS) BY MEANS OF A BELT SANDER OR EQUAL, MAINTAINING THE WELD THROAT DIMENSION NOT LESS THAN THE THICKNESS OF THE CONNECTING METAL. CHASSIS FABRICATION BY RIVETING, SCREW FASTENERS; OR SPOT WELDING NOT PERMITTED."

\* \* \* \* \*









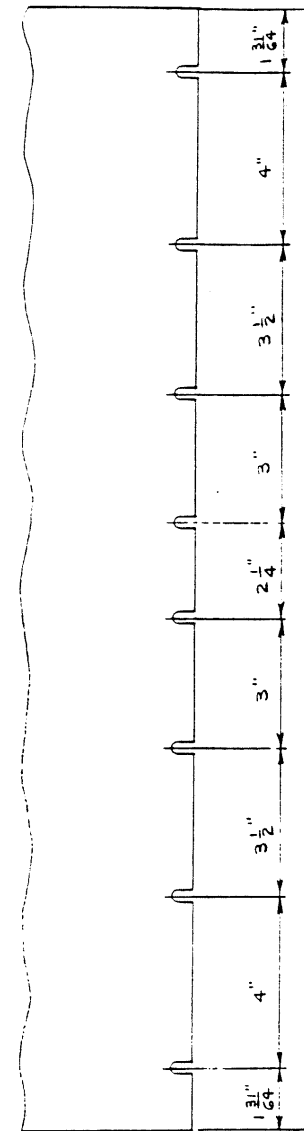
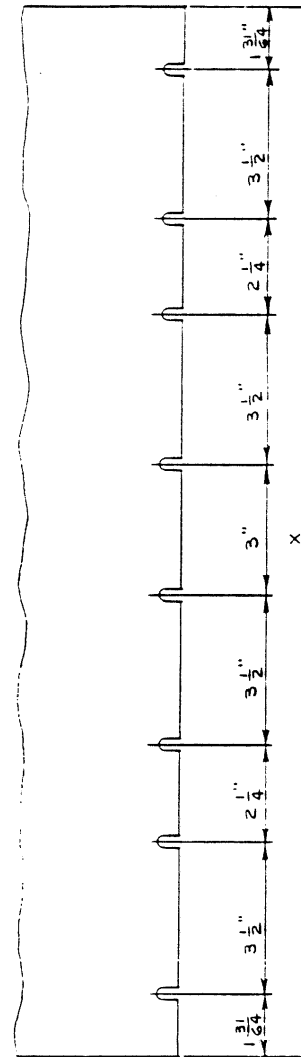
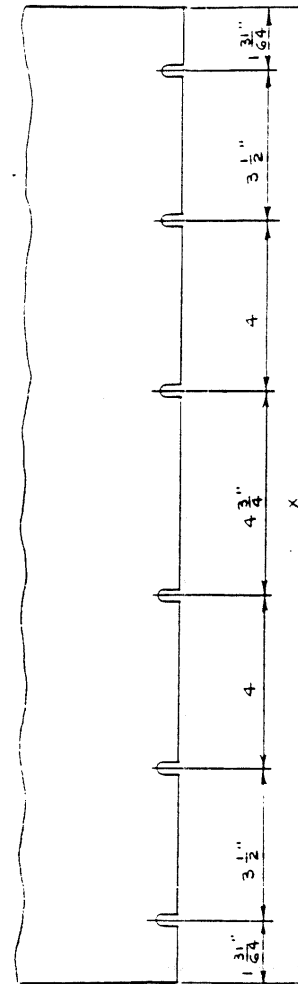
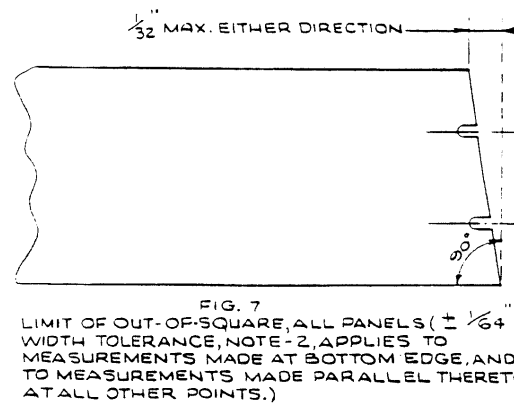
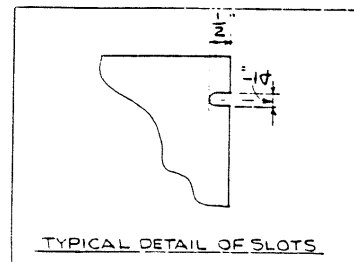
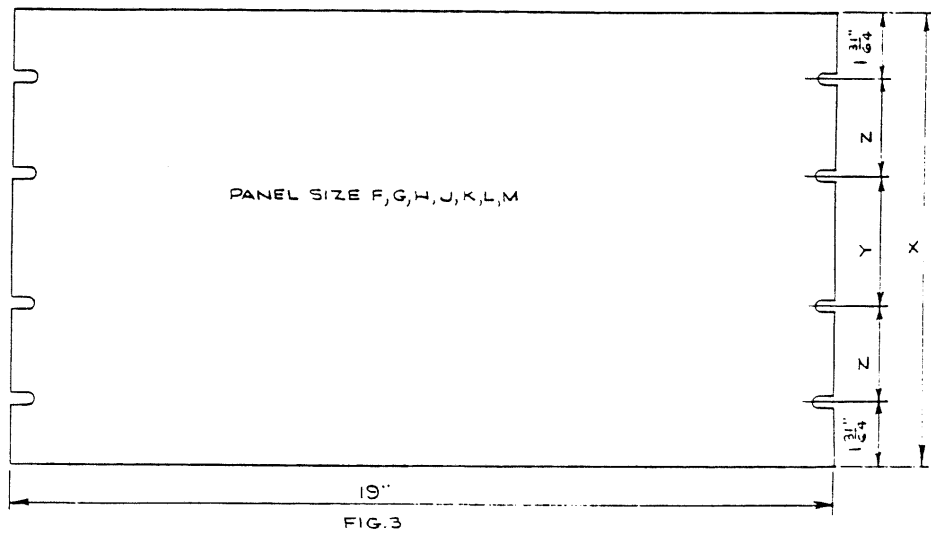
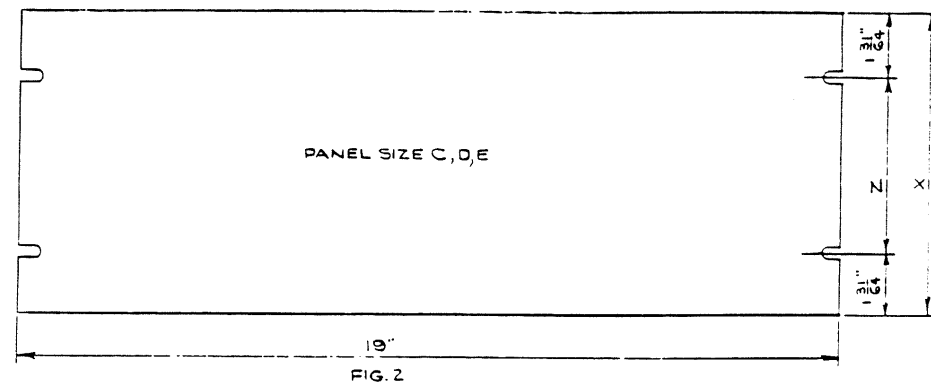
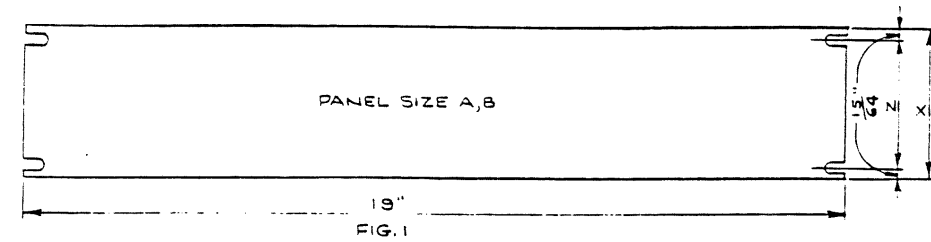


TABLE OF PANEL SIZES				
PANEL SIZE	FIG.	DIMENSION X	DIMENSION Y	DIMENSION Z
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K	3	$17 \frac{15}{32}$ "	$6 \frac{1}{2}$ "	4"
L	3	$19 \frac{7}{32}$ "	$5 \frac{3}{4}$ "	$5 \frac{1}{4}$ "
M	3	$20 \frac{31}{32}$ "	$6 \frac{1}{2}$ "	$5 \frac{3}{4}$ "
N	4	$22 \frac{23}{32}$ "	SEE DETAILS FIG. 4	
O	5	$24 \frac{9}{32}$ "	SEE DETAILS FIG. 5	
P	6	$26 \frac{3}{32}$ "	SEE DETAILS FIG. 6	

## NOTES

- MATERIAL TO BE SELECTED FROM ALUMINUM ALLOYS LISTED BELOW.  
1100-H14, 16, 18 ( $2S \frac{1}{2}H$ ,  $\frac{3}{4}H$ , H)  
3003-H14, 16, 18 ( $3S \frac{1}{2}H$ ,  $\frac{3}{4}H$ , H)  
3004-H32, 34, 36, 38 ( $4S \frac{1}{4}H$ ,  $\frac{1}{2}H$ ,  $\frac{3}{4}H$ , H)  
2024-T3 (24S-T)  
5052-H32, 34, 36, 38 ( $52S \frac{1}{4}H$ ,  $\frac{1}{2}H$ ,  $\frac{3}{4}H$ , H)  
6061-T4, 6  
7075-T6
- ALL PANELS TO BE  $19" \pm \frac{1}{64}"$  WIDE. THICKNESS OF ALL PANELS TO BE  $\frac{3}{32}"$ . ALL EDGES TO BE SQUARE CUT, OR GROUND TO DIMENSIONS FREE FROM BURRS & DEFORMATION.
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REVIEWED BY	DESIGNED BY	APPROVED BY		
	ACTE	F. B. SMITH	F. S. SAKATE	
CHIEF, ELECTRONIC STANDARDS SECTION		CHIEF, SYSTEMS STANDARDS BRANCH, RD-420		
DESIGNED BY	SYSTEMS RESEARCH AND DEVELOPMENT SERVICE	DATE	REV	LTR
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